ABSTRACT

In the present invention, the ionization signals from a plurality of cylinders are multiplexed together to reduce the powertrain control module pin count. For an inline internal combustion engine, the total pin count is reduced from the total number of cylinders in the engine, up to five, to one. In a preferred embodiment, the method of multiplexing ionization signals from a plurality of cylinders, consists of calculating an action period, combining the ionization signals, whereby information from said ionization signals is spaced apart by at least an action period in duration, and outputting the ionization signals, whereby no overlap of information occurs between the ionization signals.